



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Hisashi OHTANI et al.

Serial No. 09/197,767

Filed: November 23, 1998

For: SEMICONDUCTOR DEVICE AND
PROCESS FOR PRODUCING THE
SAME

) Group Art Unit: 2814

) Examiner: P. Cao

) CERTIFICATE OF MAILING

) I hereby certify that this correspondence is
) being deposited with the United States Postal
Service with sufficient postage as First Class
) Mail in an envelope addressed to:
Commissioner for Patents, P.O. Box 1450,
) Alexandria, VA 22313-1450, on 8-16-05.

) 

REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Examiner's Answer mailed June 16, 2005, has been received and its contents carefully noted. This response is filed within two months of the mailing date of the Examiner's Answer and therefore is believed to be timely without extension of time. Accordingly, the Appellants respectfully submit that this response is being timely filed.

The Appellants respectfully submit that Liu, Fukunaga and Izumi fail to disclose that one of ordinary skill in the art at the time of the present invention should change Liu or Fukunaga from a transmitting type display device to a reflecting type display device.

The Examiner's Answer asserts that "in view of the teachings of Izumi (as discussed above), the LCD panel 10 of Liu can be used as a transmitting LCD substrate panel or as a reflective substrate panel for either transmitting type LCD device or reflective type LCD device, respectively" and that "using the LCD substrate panel suggested from the combination of Liu and Fukunaga ... for either the reflective type LCD device or the transmitting type LCD device would have been obvious because it would depend upon the conductive material type which is used for the panel pixel electrode, as taught by Izumi" (page 14). The Appellants completely disagree that Izumi teaches or suggests that "the LCD panel 10 of Liu can be used as a transmitting

LCD substrate panel or a reflective substrate panel for either transmitting type LCD device or reflective type LCD device.”

Izumi is not directed to a generic substrate panel that can be used as a transmitting LCD substrate panel or as a reflective LCD substrate panel. Rather, Izumi is directed to a display device of a multi-panel system composed of plural liquid crystal panels (abstract). Specifically, Izumi is concerned with dispersion of an internal stress generated by curing shrinkage of a bonding agent at a chamfered portion used in connecting the multiple panels and prevention of light scattering due to cracks at the joint between liquid crystal panels in order to provide a large screen in which a joint does not stand out (*Id.*). While Izumi broadly discusses a panel structure of active matrix type adopting active matrix elements in matrix (column 5, lines 62-64) and notes that a pixel electrode will be made of a material such as indium tin oxide when used for a light transmitting type display device or of a material such as aluminum when used for a light reflecting type display device (column 6, lines 15-20), these broad teachings are not sufficient motivation to teach or suggest that a transmitting type display device, such as Fukunaga or Liu, should be changed into a reflecting type display device.

The transmitting type devices of Liu and Fukunaga could not be changed into a reflecting type device simply by changing the material of the pixel electrode TM2 or 412. Other changes would be required to form a fully functional device, and the Examiner's Answer simply has not presented any arguments or support from the prior art to support such a change to either Liu or Fukunaga. Also, it is not clear whether the hypothetical changes to Liu and Fukunaga would result in the destruction of the very features relied upon by the Examiner to allegedly teach features of the claims of present application.

Thus, since Fukunaga and Liu are directed to perfectly acceptable transmitting type devices, it is not clear why one of ordinary skill in the art who was concerned with embedded conductive layers would not have simply practiced Fukunaga or Liu alone. Also, there is no recognition in Fukunaga or Liu of a problem in joining panels in a multi-panel system as discussed in Izumi. Therefore, there is no motivation to change Fukunaga or Liu from transmitting type to reflecting type displays.

Also, throughout the “Response to Argument” section, the Examiner's Answer asserts that various features of Liu or Fukunaga and Izumi “can be” used together

(page 13, lines 17 and 22; page 14, lines 12 and 16; and page 15, lines 9, 13 and 16). However, the test for obviousness is not whether the references "could have been" combined or modified as asserted in the Examiner's Answer, but rather whether the references should have been.

With respect to the comments in the Examiner's Answer regarding page 31, lines 15-25 of the Appellants' specification, although the Appellants' invention can be applied to a transmitting type or a reflecting type display, the specification never indicates that such devices are obvious variations of each other or that they are interchangeable. Furthermore, in any event, the subject specification is not prior art and is not a proper basis to find motivation to combine Liu, Fukunaga and Izumi.

Therefore, the Examiner's Answer has not shown sufficient motivation in Fukunaga, Liu or Izumi to teach or suggest that the references should be combined.

In the present application, it is respectfully submitted that the prior art of record, either alone or in combination, does not expressly or impliedly suggest the claimed invention and the Examiner's Answer has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

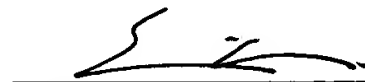
For the reasons stated above, the Examiner's Answer has not formed a proper *prima facie* case of obviousness.

At pages 17 and 18, the Examiner's Answer asserts that an embedded conductive layer and a pixel electrode in the final structure as claimed do not distinguish from the embedded conductive layer 171 and the pixel electrode 181 as suggested by Sato's Figure 2. Also, the Examiner's Answer asserts that the claims do not require that an embedded conductive layer is formed as distinct from a pixel electrode. The Appellants respectfully disagree. Independent claims 3, 4, 49 and 50 recite "an embedded conductive layer filled in said contact hole" and then, in the next line, recite "a reflective pixel electrode on said third interlayer insulating film, wherein said reflective pixel electrode is electrically connected to said drain electrode through said embedded conductive layer." It is not proper to take the position that a reflective pixel electrode is the same thing as an embedded conductive layer, when the claim requires that the reflective pixel electrode be electrically connected to a drain electrode through the

embedded conductive layer. The claims do not require that a reflective pixel electrode is electrically connected to a drain electrode through itself. The Appellants respectfully submit that claims 3, 4, 49 and 50 clearly require that an embedded conductive layer is distinct from a pixel electrode, because the reflective pixel electrode is electrically connected to a drain electrode through the embedded conductive layer. The prior art of record does not teach or suggest this feature of claims 3, 4, 49 and 50. Also, as noted in the Appeal Brief, Sato does not teach or suggest that an embedded conductive layer is filled in a contact hole.

Since the prior art does not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Respectfully submitted,



Eric J. Robinson
Registration No. 38,285

Robinson Intellectual Property Law Office
PMB 955
21010 Southbank Street
Potomac Falls, VA 20165
(571) 434-6789
(571) 434-9499 (facsimile)